



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,320	07/02/2003	Michael Bothe	041165-9052	4065
23409	7590	10/19/2004	EXAMINER	
MICHAEL BEST & FRIEDRICH, LLP 100 E WISCONSIN AVENUE MILWAUKEE, WI 53202			BENENSON, BORIS	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/612,320	Applicant(s) BOTHE ET AL.	
	Examiner Boris Benenson	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/07/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/20/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2836

Detailed Actions

Claim Objections

1. Claims 2 and 11 are objected to because of the following informalities: Claim language require: "the coil form includes one of impregnated paper, rubber, glass, ceramics, plastics, ferrite material and a piece of printed circuit board". Specification as well as original Claims describe "a coil form, for example of impregnated paper, rubber, glass, ceramics, plastics, ferrite material or a piece of a printed circuit board" (Page 3, Line 31 - Page 4, Line1). It is not clear if the coil form is comprising a piece of printed circuit board and one of materials such as impregnated paper, rubber, glass, ceramics, plastics, ferrite material or a piece of printed circuit board is a part of a list of claimed materials. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

Art Unit: 2836

differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4, 8-9, 10-11, 13, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho (US Patent Application US 2003/0102947 filed 12/05/2001, published 06/05/2003) in view of Kalsi et al. (6,275,365). Ho discloses (as a Prior Art) a circuit (Figure 1) for converting an AC source into DC one comprising an inrush current limiter (50) and a fusible link (60) connected with an AC input source. Ho disclosed a circuit wherein one element provides function of the fusible link (interruption function), the inrush current limiter and an EMC choke that achieved by installing an electrically conductive winding - resistance multiplayer coil (Fig.3, Pos.2) substituting elements (50 and 60) of the Prior Art. Coil comprises two coils (21) with a smaller number of turns and coil (22) with a larger number of coils. Ho didn't disclose a bifilar winding of the coil. Kalsi et al. teach a Resistive Fault Current Limiter. The Current Limiter employs bifilar coils. Kalsi et al. teach "In essence, this parallel, bifilar winding approach provides a low inductance with a configuration (i.e., coil, solenoid) commonly associated with providing high inductance" (Col. 5, Lines 36-39), therefore replacement of the

Art Unit: 2836

multilayer coil (2) of Ho with a bifilar winding coil will eliminate the EMC choke, and multilayer coil (2) will be a low inductance resistive winding. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified circuit of Ho with teachings of Kalsi et al. and use bifilar coil (with equal numbers of turns made in opposite directions), because it reduces power supply noise by reducing inductance of power supply wiring, that may be critical in some applications.

Referring to Claims 2 and 11, Ho disclosed a magnetic component 1 which is a magnetic core having ferromagnetic characteristic.

Referring to Claims 4 and 13, Examiner is taken an Official Notice that it is well known in the art to use an insulated wire in making a winding. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an insulated wire for windings, because it will prevent shorting of adjacent loops in the coil.

Referring to Claims 8, 9, 17 and 18, Ho disclosed that the device "is coated with a covering layer 4 having protection effect to avoid smoke or fire when the resistance coil 2 blows" (paragraph 17).

Art Unit: 2836

3. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho (US Patent Application US 2003/0102947) in view of Kalsi et al. (6.275,365) as applied to claims 1 and 10 above, and further in view of Zaleski (3,845,417). Ho and Kalsi et al. did not disclose a winding wherein a plurality of turns are spaced apart for mutual isolation. Zaleski teaches a Gyromagnetic Circuit Element wherein "the coil was wound with No. 40 bare wire with the turns spaced apart by approximately 0.003 inches" (Col.3, Lines 35-37). Applicant does not provide any significant reason for using uninsulated wire for windings of the coil, but if for any design considerations it is preferable it would have been obvious to one of ordinary skill in the art at the time the invention was made to have spaced turn of the windings apart, because it will prevent shorting of adjacent loops in the coil.

4. Claims 6-7 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho (US Patent Application US 2003/0102947) in view of Kalsi et al. (6.275,365) as applied to claims 1 and 10 above, and further in view of Lorenzen (4,821,152). Ho and Kalsi et al. did not disclose use of wire ends or terminal pins to be soldered into a printed circuit board. Lorenzen teaches a Method And Device For Mounting Electrical Components On A Circuit Board. Lorenzen describes In

Art Unit: 2836

Background Of The Invention section Lorenzen describes conventional method of mounting electronic components on a printed circuit board "if transformers, anti-interference coils or capacitors have to be arranged, it is necessary to connect soldering pins with the normally relatively thin connection wires of the windings of a transformer or of a coil. These pins are then seated in suitable recesses of the housing extending towards the circuit boards a length sufficient to ensure that during mounting of the housing, the soldering pins can be passed through suitable bores in the circuit board to enable them to be soldered on the reverse side, i.e. on the conductor side of the circuit board. Although it is sometimes possible to do without such separate soldering pins, namely when the connection wires are relatively thick" (Col.2, lines 45-58). In other words an electronic component may be attached to a circuit board directly by soldering its wire (if wire is thick enough) or through termination pins specially inserted and soldered to a surface of the circuit board. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use teachings of Lorenzen and connect coil to the circuit board by soldering wire end or through termination pins and solder the wire to printed board or termination point at point of a

Art Unit: 2836

connection (soldering point), because it is known method provide reliable connection between the circuit board and component.

5. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho (US Patent Application US 2003/0102947) in view of Kalsi et al. (6.275,365) as applied to claims 1 and 10 above, and further in view of Kropielicki et al. (5,835,066). Ho and Kalsi et al. did not disclose a material from which coil windings are made. Kropielicki et al. teaches a Coil Construction. Kropielicki et al. teaches a bifilar coil construction comprising two separate windings (Fig.1, Pos. 9 and 10). Each coil is made from copper wire. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a copper wire for coil winding, because copper is a material, which can be easily soldered to a circuitry of the printed board.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the

Art Unit: 2836

organization where this application or proceeding is assigned is
(703) 872-9306.

Any inquiry of a general nature or relating to the status
of this application or proceeding should be directed to the
receptionist whose telephone number is (703) 308-0956.

Boris Benenson
Examiner
Art Unit 2836

B.B.



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800
